Amendments to the Drawings

Figure 4A has been amended in order to illustrate the limitation of amended Claim 26.

Attachment: Replacement Sheets

Annotated Marked-Up Drawing

REMARKS

In response to the Office Action mailed March 14, 2007, Applicants respectfully request reconsideration. Claims 1-47 were previously pending in this application. By this amendment, Applicants are canceling Claims 4, 20, and 41 without prejudice or disclaimer. Claims 1, 5, 12, 17, 21, 26, and 37-39 have been amended. As a result, Claims 1-3, 5-19, 21-40, and 42-47 are pending for examination with Claims 1, 17, and 37-39 being independent. The application is believed to be in condition for allowance.

Claim Objections

The Office Action has objected to Claim 26 for being a substantial duplicate of Claim 25. Claim 26 has now been amended. Support of the amendments to Claim 26, Fig. 4A and the specification may be found on page 22, lines 12-15 of Applicants' specification, as originally filed. Figure 4A has also been amended to illustrate the element of amended Claim 26. The specification, page 10, lines 17 through 28, has also been amended to include the amendment of Fig. 4A.

Rejections Under 35 U.S.C. §103

The Office Action rejects claims 1-4, 6-20, 22 and 24-47 under 35 U.S.C. §103(a) as being unpatentable over Wong et al., U.S. Patent No. 5,062,703 (Wong), in view of Verhoof et al., European Patent Application No. 0 560 426 A1 (Verhoof), and further in view of Tomofuji et al., U.S. Patent No. 5,383,046 (Tomofuji). The Office Action also rejects Claim 5 under 35 U.S.C. §103(a) as being unpatentable over Wong in view of Verhoof, Tomofuji, and further in view of Akiyama et al., U.S. Patent No. 5,982,530 (Akiyama). The Office Action also rejects Claim 23 under 35 U.S.C. §103(a) as being unpatentable over Wong in view of Verhoof, Tomofuji, and further in view of Lemus et al., U.S. Patent No. 6,111,676 (Lemus). Applicants respectfully traverse these rejections.

Remarks Regarding the Amended Claims:

Amended Claim 1 now recites "...sweeping the pilot tone across a frequency range; detecting amplitudes and phases *of the pilot tone* along a forward path *and a reflected path* of the optical transmission path; [and] determining dispersion in at least a portion of the optical transmission path based on the detected amplitudes and phases; ...," where the underlined

elements indicate the amendment presented in the claim. Claim 1 has been amended to include the elements of canceled Claim 4. Applicants note that the remaining independent Claims 17 and 37-39 have also been amended in a similar manner.

Remarks Regarding the Cited References:

Wong illustrates a lightwave component measurement system that provides modulation measurements with the use of digital signal processing (abstract). In column 6, lines 4-7 (relied upon by the Office Action), Wong describes that the measurement system may be used for measuring *pulse* dispersion.

Verhoof illustrates a method and apparatus for determining fault locations in a local optical network (abstract). Verhoof does not teach or suggest dispersion compensation.

Tomofuji illustrates a supervisor and control signal transmitting system for use in an optically amplifying repeater system, amplifying attenuated light, and transmitting data over a long distance between a transmitting station and a receiving station through a polarity of repeaters (abstract). Tomofuji does not teach or suggest dispersion compensation.

Akiyama illustrates an apparatus for driving an optical modulator to measure, and compensate for, dispersion in an optical transmission line (abstract). In the device of Akiyama, a processor determines the amount of dispersion in a transmission line by comparing a time interval between first and second *detected pulses* to the time interval of the first and second *pulses before transmission* (abstract).

Lemus illustrates a method for detecting reflections in bidirectional multichannel communication systems by using a signature attached to each signal (abstract). Lemus does not teach or suggest dispersion compensation.

The Claims Distinguish Over the Prior Art of Record Taken Individually or in Any Combination:

None of the prior art references cited in the record teach or suggest determining a dispersion in at least a portion of the optical transmission path based on detected amplitudes and phases of *a swept pilot tone signal*, where the detected amplitudes and phases are obtained from a forward path *and a reflected path*. The cited prior art of record instead teaches away from the claimed invention by teaching methods of determining dispersion by evaluating measurements

obtained in a forward path only. The prior art or record further teaches away from the claimed invention by teaching methods of determining dispersion by using *pulse* signals, not a swept frequency signal. In contrast, the claimed invention determines dispersion via a measured (in a forward *and reflected* path) swept frequency signal (not a pulse).

Thus, amended Claim 1 is patentably distinct from the prior art of record, taken individually or in any combination. Claims 2, 3, 5-16, and 46 depend from Claim 1 and therefore patentably distinguish over the prior art of record for at least the same reasons.

Amended Independent Claim 17 (from which Claims 18, 19, 21-36 and 47 depend) and amended Independent Claims 37, 38, and 39 (from which Claims 40 and 42-45 depend) now also include "determining dispersion in at least a portion of the optical transmission path based on the detected amplitudes and phases [*of a swept pilot tone signal,*]" where the detected amplitudes and phases are obtained from a forward path *and a reflected path.* As should be appreciated from the above remarks relating to Claim 1, the prior art of record does not teach or suggest the above mentioned limitation. Thus, Claims 17-19, 21-40, and 42-47 patentably distinguish the prior art of record for at least the same reasons as mentioned in relation to Claim 1. Accordingly, withdrawal of these rejections is respectfully requested.

CONCLUSION

In view of the above amendments and remarks, it is believed that all claims, Claims 1-3, 5-19, 21-40, and 42-47 that will be pending after entry of this amendment are in condition for allowance, and it is respectfully requested that the application be passed to issue. If the Examiner feels that a telephone conference would expedite prosecution of this case, the Examiner is invited to call the undersigned.

Respectfully submitted,

HAMILTON, BROOK, SMITH & REYNOLDS, P.C.

By Mark B Solomon

Mark B. Solomon
Registration No. 44,348
Telephone: (978) 341-0036
Facsimile: (978) 341-0136

Concord, MA 01742-9133
Date: 7/12/07

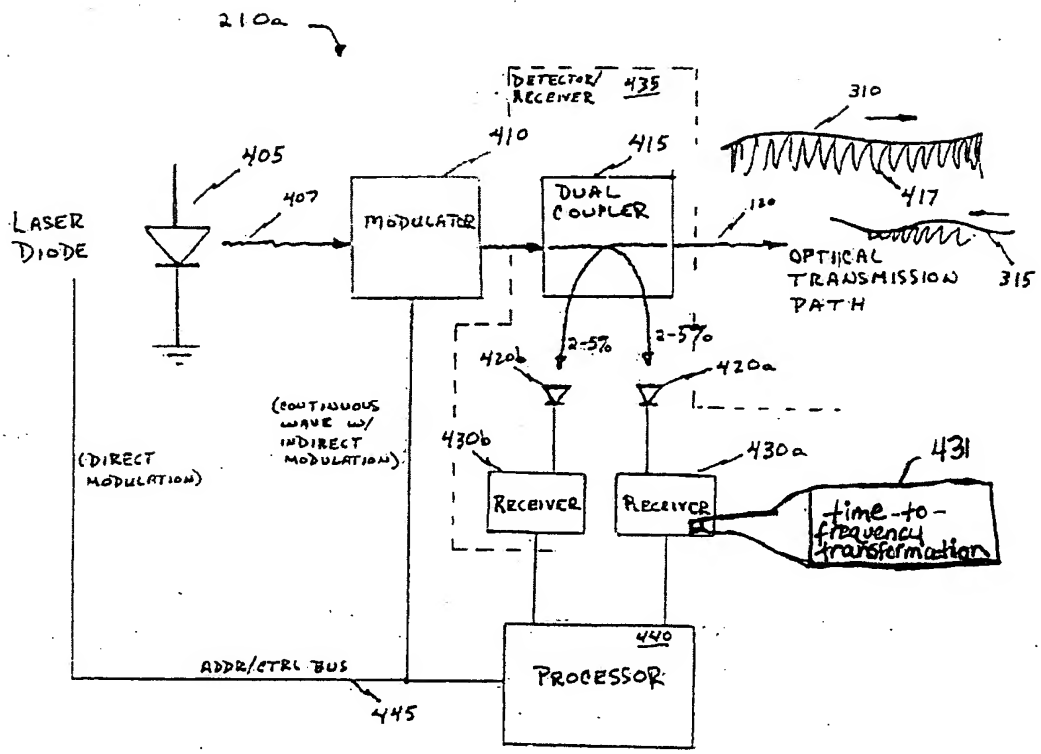

FIG. 4A